INDEX TO AUTHORS

A

ALBERTS, W. WATSON, 724

ANDEREGG, J. W., GEIL, P. H., BEEMAN, W. W., and KAESBERG, PAUL. An x-ray scattering investigation of wild cucumber mosaic virus and a related protein, 657

ARONSON, ARTHUR I., and MCCARTHY, BRIAN J. Studies of *E. coli* ribosomal RNA and its degradation products, 215

————. See MCCARTHY and ARONSON, 227

B

BEEMAN, W. W. See ANDEREGG, GEIL, BEEMAN, and KAESBERG, 657

BENOLKEN, R. M. Reversal of photoreceptor polarity recorded during the graded receptor potential response to light in the eye of *Limulus*, 551

BLOUT, ELKAN R., See SIMMONS and BLOUT, 55

BOEZI, J. A., and COWIE, DEAN B. Kinetic studies of β-galactosidase induction, 639

BOYCE, RICHARD. See SETLOW and BOYCE, 29

BRITTEN, R. J. See ROBERTS, BRITTEN, and MCCLURE, 649

BROWN, JEANETTE S., and FRENCH, C. STACY. The long wave length forms of chlorophyll *a*, 539

BURTON, A. C. See PROTHERO and BURTON, 565

C

CAMPBELL, CHARLES I., 203

CANN, JOHN R. Spectroscopic evidence for complexing of acetic acid with bovine serum albumin, gramicidin, and dimethylformamide, 711

CAVALIERI, LIEBE F., DEUTSCH, JOAN F., and ROSENBERG, BARBARA HATCH. The molecular weight and aggregation of DNA, 301

———— and ROSENBERG, BARBARA HATCH. The replication of DNA. I. Two molecular classes of DNA, 317

———— and ————. II. The number of polynucleotide strands in the conserved unit of DNA, 323

———— and ————. III. Changes in the number of strands in *E. coli* DNA during its replication cycle, 337

COLE, KENNETH S. An analysis of the membrane potential along a clamped squid axon, 401

COLE, KENNETH S., and MOORE, JOHN W. Potassium ion current in the squid giant axon: dynamic characteristic, 1

————. See TAYLOR, MOORE, and COLE, 161

COWIE, DEAN B. See BOEZI and COWIE, 639

D

DAVISON, PETER F. See FREIFELDER, DAVISON, and GEIDUSCHEK, 389

DEUTSCH, JOAN F. See CAVALIERI, DEUTSCH, and ROSENBERG, 301

F

FITZHUGH, RICHARD. Impulses and physiological states in theoretical models of nerve membrane, 445

FORK, D. C. See FRENCH and FORK, 669

FREIFELDER, DAVID, DAVISON, PETER F., and GEIDUSCHEK, E. PETER. Damage by visible light to the acridine orange–DNA complex, 389

FRENCH, C. STACY, and FORK, D. C. Computer solutions for photosynthesis rates from a two pigment model, 669

————. See BROWN and FRENCH, 539

G

GEIDUSCHEK, E. PETER. See FREIFELDER, DAVISON, and GEIDUSCHEK, 389

GEIL, P. H. See ANDEREGG, GEIL, BEEMAN, and KAESBERG, 657

GERSTEIN, GEORGE L., and KIANG, NELSON Y.-S. An approach to the quantitative analysis of electrophysiological data from single neurons, 15

GESSNER, URS. Effects of the vessel wall on electromagnetic flow measurement, 627

GOVINDJEE, 373

———— and RABINOWITCH, EUGENE. Action spectrum of the "second Emerson effect," 73

————, ————, and THOMAS, JAN B. Inhibition of photosynthesis in certain algae by extreme red light, 91

————. See THOMAS and GOVINDJEE, 63

GOVINDJEE, RAJNI, and RABINOWITCH, EUGENE. Studies on the second Emerson effect in the Hill reaction in algal cells, 377

GREEN, MELVIN H., and HALL, BENJAMIN D. A comparison of the native and derived 30S and 50S ribosomes of *Escherichia coli*, 517

H

HALL, BENJAMIN D. See GREEN and HALL, 517

HEARON, JOHN Z. A property of second order differential equations with application to formal kinetics, 581

I

ICHIMURA, SHOJI. The photoconductivity of chloroplasts and the far red light effect, 99

IIDA, MITSUO. See STARK, IIDA, and WILLIS, 279

K

KAESBERG, PAUL. See ANDEREGG, GEIL, BEEMAN, and KAESBERG, 657

KEMPNER, E. S., and POLLARD, ERNEST C. Radiation inhibition of amino acid uptake by *Escherichia coli*, 265

KIANG, NELSON Y.-S. See GERSTEIN and KIANG, 15

KRIMM, S. See SCHOR and KRIMM, 467, 489

L

LAUFFER, MAX A. Theory of diffusion in gels, 205

———, POLLARD, ERNEST C., and WILLIAMS, ROBLEY C., 723

LESSER, G. T. See PERL, LESSER, and STEELE, 111

LUZZATI, V. See TIMASHEFF, WITZ, and LUZZATI, 525

M

MAURO, ALEXANDER. Anomalous impedance, a phenomenological property of time-variant resistance. An analytic review, 353

MAZUR, PETER. Physical and temporal factors involved in the death of yeast at subzero temperatures, 247

MCCARTHY, BRIAN J. and ARONSON, ARTHUR I. The kinetics of the synthesis of ribosomal RNA in *E. coli*, 227

———. See ARONSON and MCCARTHY, 215

MCCLURE, F. T. See ROBERTS, BRITTEN, and MCCLURE, 649

MCCREA, J. F., PREISS, JOHN W., and O'LOUGHLIN, JEAN. Physical studies on pox viruses. I. Inactivation of vaccinia virus infectivity with low-energy electrons, 43

MOORE, JOHN W. See COLE and MOORE, 1

———. See TAYLOR, MOORE, and COLE, 161

O

O'LOUGHLIN, JEAN. See MCCREA, PREISS, and O'LOUGHLIN, 43

P

PATLAK, CLIFFORD S. Energy expenditure by active transport mechanisms. II. Further generalizations, 419

PATTEE, HOWARD H. On the origin of macromolecular sequences, 683

PERL, W., LESSER, G. T., and STEELE, J. M. The kinetics of distribution of the fat-soluble inert gas cyclopropane in the body, 111

POLLARD, ERNEST C. See KEMPNER and POLLARD, 265

———. See LAUFFER, POLLARD, and WILLIAMS, 723

———. See PREISS and POLLARD, 429

PREISS, JOHN W., and POLLARD, ERNEST C. Localization of β-galactosidase in cells of *Escherichia coli* by low voltage electron bombardment, 429

———. See MCCREA, PREISS, and O'LOUGHLIN, 43

PROTHERO, J., and BURTON, A. C. The physics of blood flow in capillaries. I. The nature of the motion, 565

R

RABINOWITCH, EUGENE. See GOVINDJEE and RABINOWITCH, 73

———. See GOVINDJEE, RABINOWITCH, and THOMAS, 91

———. See R. GOVINDJEE and RABINOWITCH, 377

ROBERTS, R. B., BRITTEN, R. J., and MCCLURE, F. T. A model for the mechanism of enzyme induction, 649

ROSENBERG, BARBARA HATCH. See CAVALIERI, DEUTSCH, and ROSENBERG, 301

———. See CAVALIERI and ROSENBERG, 317, 323, 337

ROSENBERG, MURRAY D. Microexudates from cells grown in tissue culture, 137

S

SAMUELS, ARTHUR J. Immunoenzymological evidence suggesting a change in conformation of adenylic acid deaminase and creatine kinase during substrate combination, 437

SCHOR, R., and KRIMM, S. Studies on the structure of feather keratin. I. X-ray diffraction studies and other experimental data, 467

——— and ———. II. A β-helix model for the structure of feather keratin, 489

SETLOW, R. B., and BOYCE, RICHARD. The ultraviolet light inactivation of ΦX174 bacteriophage at different wave lengths and pH's, 29

SETLOW, R. B. See VAN TUBERGEN and SETLOW, 589
SIMMONS, NORMAN, S., and BLOUT, ELKAN R. The structure of tobacco mosaic virus and its components: ultraviolet optical rotatory dispersion, 55
STARK, LAWRENCE, IIDA, MITSUO, and WILLIS, PAUL A. Dynamic characteristics of the motor coordination system in man, 279
STEELE, J. M. See PERL, LESSER, and STEELE, 111

T

TAYLOR, ROBERT E., MOORE, JOHN W., and COLE, KENNETH S. Analysis of certain errors in squid axon voltage clamp measurements, 161
THOMAS, JAN B., and GOVINDJEE. Changes in quantum yield of photosynthesis in the red alga *Porphyridium cruentum* caused by stepwise reduction in the intensity of light preferentially absorbed by the phycobilins, 63
THOMAS, JAN B., and GOVINDJEE. See GOVINDJEE, RABINOWITCH, and THOMAS, 91
TIMASHEFF, SERGE N., WITZ, J., and LUZZATI, V. The structure of high molecular weight ribonucleic acid in solution. A small-angle x-ray scattering study, 525

V

VAN TUBERGEN, R. P., and SETLOW, R. B. Quantitative radioautographic studies on exponentially growing cultures of *Escherichia coli*. The distribution of parental DNA, RNA, protein, and cell wall among progeny cells, 589

W

WILLIAMS, ROBLEY C. See LAUFFER, POLLARD, and WILLIAMS, 723
WILLIS, PAUL A. See STARK, IIDA, and WILLIS, 279
WITZ, J. See TIMASHEFF, WITZ, and LUZZATI, 525

INDEX TO SUBJECTS

A

Acetic acid, spectroscopic evidence for complexing with bovine serum albumin, gramicidin, and dimethylformamide, 711
Acid, acetic, spectroscopic evidence for complexing with bovine serum albumin, gramicidin, and dimethylformamide, 711
————, amino, uptake by *Escherichia coli*, radiation inhibition, 265
————, deaminase, adenylic, and creatine kinase, immunoenzymological evidence suggesting conformation change during substrate combination, 437
————, deoxyribonucleic, *Escherichia coli*, changes in number of strands during replication cycle, 337
————, deoxyribonucleic, molecular weight and aggregation, 301
————, deoxyribonucleic, number of polynucleotide strands in conserved unit, 323
————, deoxyribonucleic, replication, two molecular classes, 317
————, deoxyribonucleic and ribonucleic, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
————, ribonucleic and deoxyribonucleic, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
————, ribonucleic, high molecular weight, in solution, small-angle x-ray scattering study of structure, 525
————, ribonucleic, ribosomal, *Escherichia coli*, degradation products, 215
————, ribonucleic, ribosomal, *Escherichia coli*, kinetics of synthesis, 227
Acridine orange—deoxyribonucleic acid complex, damage by visible light, 389
Adenylic acid deaminase and creatine kinase, immunoenzymological evidence suggesting conformation change during substrate combination, 437
Albumin, bovine serum, gramicidin, and dimethylformamide, spectroscopic evidence for complexing of acetic acid with, 711
Alga, red, *Porphyridium cruentum*, photosynthesis, changes in quantum yield caused by stepwise reduction in intensity of light preferentially absorbed by phycobilins, 63
Algae, inhibition of photosynthesis in by extreme red light, 91
Algal cells, second Emerson effect in Hill reaction in, 377
Amino acid uptake by *Escherichia coli*, radiation inhibition, 265
Axon, giant, squid, potassium ion current in, dynamic characteristic, 1
————, squid, clamped, membrane potential along, 401
————, squid, voltage clamp measurements in, analysis of certain errors, 161

B

Bacteriophage, ΦX174, ultraviolet light inactivation at different wave lengths and hydrogen ion concentrations, 29
Blood flow in capillaries, nature of motion, 565
Bovine serum albumin, gramicidin, and dimethylformamide, spectroscopic evidence for complexing of acetic acid with, 711

C

Capillaries, physics of blood flow, nature of motion, 565
Cell wall, deoxyribonucleic acid, ribonucleic acid, and protein, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
Cells, algal, second Emerson effect in Hill reaction in, 377
————, *Escherichia coli*, localization of β-galactosidase by low voltage electron bombardment, 429
———— grown in tissue culture, microexudates from, 137
————, progeny, of exponentially growing cultures of *Escherichia coli*, distribution of parental deoxyribonucleic acid, ribonucleic acid, protein, and cell wall among, quantitative radioautographic studies, 589
Chlorophyll *a*, long wave length forms, 539
Chloroplasts, photoconductivity and far red light effect, 99
Computer solutions for photosynthesis rates from two pigment model, 669
Creatine kinase and adenylic acid deaminase, immunoenzymological evidence suggesting conformation change during substrate combination, 437

Cucumber mosaic virus, wild, and related protein, x-ray scattering, 657
Cultivation, *Escherichia coli*, exponentially growing, quantitative radioautographic studies, distribution of parental deoxyribonucleic acid, ribonucleic acid, protein, and cell wall among progeny cells, 589
————, tissue, microexudates from cells grown in, 137
Current, potassium ion, in squid giant axon, dynamic characteristic, 1
Cyclopropane, fat-soluble inert gas, kinetics of distribution in body, 111

D

Deaminase, adenylic acid, and creatine kinase, immunoenzymological evidence suggesting conformation change during substrate combination, 437
Death of yeast at subzero temperatures, physical and temporal factors involved, 247
Deoxyribonucleic acid, *Escherichia coli*, changes in number of strands during replication cycle, 337
———— acid—acridine orange complex, damage by visible light, 389
———— acid, molecular weight and aggregation, 301
———— acid, number of polynucleotide strands in conserved unit, 323
———— acid, replication, two molecular classes, 317
———— acid, ribonucleic acid, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
Diffraction studies, x-ray, on feather keratin structure, 467
Diffusion in gels, theory, 205
Dimethylformamide, bovine serum albumin, and gramicidin, spectroscopic evidence for complexing of acetic acid with, 711
Dispersion, ultraviolet optical rotatory, of tobacco mosaic virus and components, 55

E

Electromagnetic flow measurement, effects of vessel wall, 627
Electron bombardment, low voltage, localization of β-galactosidase in *Escherichia coli* cells by, 429
Electrons, low-energy, inactivation of vaccinia virus infectivity with, 43
Electrophysiological data from single neurons, approach to quantitative analysis, 15
Emerson effect, second, action spectrum, 73
———— effect, second, in Hill reaction in algal cells, 377
Energy expenditure by active transport mechanisms, 419
Enzyme induction, model for mechanism, 000
Enzymological, immuno-, evidence suggesting conformation change of adenylic acid deaminase and creatine kinase during substrate combination, 437
Equations, second order differential, property with application to formal kinetics, 581
Escherichia coli cells, localization of β-galactosidase by low voltage electron bombardment, 429
———— *coli*, comparison of native and derived 30S and 50S ribosomes, 517
———— *coli* deoxyribonucleic acid, changes in number of strands during replication cycle, 337
———— *coli*, exponentially growing cultures, quantitative radioautographic studies, distribution of parental deoxyribonucleic acid, ribonucleic acid, protein, and cell wall among progeny cells, 589
———— *coli*, kinetics of ribosomal ribonucleic acid synthesis in, 227
———— *coli*, radiation inhibition of amino acid uptake, 265
———— *coli* ribosomal ribonucleic acid, degradation products, 215
Exudates, micro-, from cells grown in tissue culture, 137
Eye, *Limulus*, reversal of photoreceptor polarity recorded during graded receptor potential response to light in, 551

F

Fat-soluble inert gas cyclopropane in body, kinetics of distribution, 111
Feather keratin, β-helix model for structure, 489
———— keratin, structure, x-ray diffraction studies and other experimental data, 467
Flow, blood, in capillaries, physics, nature of motion, 565
———— measurement, electromagnetic, effects of vessel wall, 627

G

β-Galactosidase induction, kinetic studies, 000
————, localization in *Escherichia coli* cells by low voltage electron bombardment, 429
Gas, cyclopropane, fat-soluble inert, kinetics of distribution in body, 111
Gels, theory of diffusion in, 205
Gramicidin, bovine serum albumin, and dimethylformamide, spectroscopic evidence for complexing of acetic acid with, 711

H

β-Helix model for structure of feather keratin, 489

Hill reaction in algal cells, second Emerson effect in, 377
Hydrogen ion concentrations and wave lengths, different, ultraviolet light inactivation of ΦX174 bacteriophage at, 29

I

Immunoenzymological evidence suggesting conformation change of adenylic acid deaminase and creatine kinase during substrate combination, 437
Impedance, anomalous, phenomenological property of time-variant resistance, analytic review, 353
Impulses and physiological states in theoretical models of nerve membrane, 445
Ion concentrations, hydrogen, and wave lengths, different, ultraviolet light inactivation of ΦX174 bacteriophage at, 29
———— current, potassium, in squid giant axon, dynamic characteristic, 1

K

Keratin, feather, β-helix model for structure, 489
————, feather, structure, x-ray diffraction studies and other experimental data, 467
Kinase, creatine, and adenylic acid deaminase, immunoenzymological evidence suggesting conformation change during substrate combination, 437
Kinetic studies of β-galactosidase induction, 639
Kinetics, formal, property of second order differential equations with application to, 581
———— of distribution of fat-soluble inert gas cyclopropane in body, 111
———— of ribosomal ribonucleic acid synthesis in *Escherichia coli*, 227

L

Letters to the Editor, 203, 373, 623, 624
Light, extreme red, inhibition of photosynthesis in certain algae by, 91
————, far red effect and photoconductivity of chloroplasts, 99
———— in *Limulus* eye, reversal of photoreceptor polarity recorded during graded receptor potential response to, 551
———— intensity preferentially absorbed by phycobilins, changes in quantum yield of photosynthesis in red alga *Porphyridium cruentum* caused by stepwise reduction in, 53
————, ultraviolet, inactivation of ΦX174 bacteriophage at different wave lengths and hydrogen ion concentrations, 29
Light, visible, damage to acridine orange-deoxyribonucleic acid complex by, 389
Limulus eye, reversal of photoreceptor polarity recorded during graded receptor potential response to light in, 551

M

Macromolecular sequences, origin, 683
Man, motor coordination system, dynamic characteristics, 279
Membrane, nerve, impulses and physiological states in theoretical models, 445
———— potential along clamped squid axon, 401
Microexudates from cells grown in tissue culture, 137
Model for mechanism of enzyme induction, 649
————, β-helix, for structure of feather keratin, 489
————, two pigment, computer solutions for photosynthesis rates from, 669
Models, theoretical, of nerve membrane, impulses and physiological states, 445
Molecular classes, two, of deoxyribonucleic acid, 317
————, macro-, sequences, origin, 683
———— weight and aggregation of deoxyribonucleic acid, 301
———— weight, high, ribonucleic acid in solution, small-angle x-ray scattering study of structure, 525
Mosaic virus, tobacco, and components, structure, ultraviolet optical rotatory dispersion, 55
———— virus, wild cucumber, and related protein, x-ray scattering, 657
Motor coordination system in man, dynamic characteristics, 279

N

Nerve membrane, impulses and physiological states in theoretical models, 445
Neurons, single, approach to quantitative analysis of electrophysiological data from, 15
Nucleic acid, deoxyribo-, and acridine orange, complex, damage by visible light, 389
———— acid, deoxyribo-, *Escherichia coli*, changes in number of strands during replication cycle, 337
———— acid, deoxyribo-, molecular weight and aggregation, 301
———— acid, deoxyribo-, number of polynucleotide strands in conserved unit, 323
———— acid, deoxyribo-, replication, two molecular classes, 317

Nucleic acid, deoxyribo-, ribonucleic acid, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
———— acid, ribo-, deoxyribonucleic acid, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
———— acid, ribo-, high molecular weight, in solution, small-angle x-ray scattering study of structure, 525
———— acid, ribo-, ribosomal, *Escherichia coli*, degradation products, 215
———— acid, ribo-, ribosomal, *Escherichia coli*, kinetics of synthesis, 227
Nucleotide, poly-, number of strands in conserved unit of deoxyribonucleic acid, 323

O

Optical rotatory dispersion, ultraviolet, of tobacco mosaic virus and components, 55

P

Photoconductivity of chloroplasts and far red light effect, 99
Photoreceptor polarity, reversal recorded during graded receptor potential response to light in *Limulus* eye, 551
Photosynthesis in red alga, *Porphyridium cruentum*, changes in quantum yield caused by stepwise reduction in intensity of light preferentially absorbed by phycobilins, 63
————, inhibition in certain algae by extreme red light, 91
———— rates from two pigment model, computer solutions for, 669
Phycobilins, changes in quantum yield of photosynthesis in red alga *Porphyridium cruentum* caused by stepwise reduction in intensity of light preferentially absorbed by, 63
Physical studies on pox viruses, inactivation of vaccinia virus infectivity with low-energy electrons, 43
———— and temporal factors involved in death of yeast at subzero temperatures, 247
Physics of blood flow in capillaries, nature of motion, 565
Physiological, electro-, data from single neurons, approach to quantitative analysis, 15
———— states and impulses in theoretical models of nerve membrane, 445
Pigment, two, model, computer solutions for photosynthesis rates from, 669
Polarity, photoreceptor, reversal recorded during graded receptor potential response to light in *Limulus* eye, 551
Polynucleotide strands, number in conserved unit of deoxyribonucleic acid, 323
Porphyridium cruentum, photosynthesis, changes in quantum yield caused by stepwise reduction in intensity of light preferentially absorbed by phycobilins, 63
Potassium ion current in squid giant axon, dynamic characteristic, 1
Potential, membrane, along clamped squid axon, 401
———— response, receptor, graded, to light in *Limulus* eye, reversal of photoreceptor polarity recorded during, 551
Pox viruses, physical studies, inactivation of vaccinia virus infectivity with low-energy electrons, 43
Protein, deoxyribonucleic acid, ribonucleic acid, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
———— related to wild cucumber mosaic virus, x-ray scattering, 657

R

Radiation inhibition of amino acid uptake by *Escherichia coli*, 265
Radioautographic studies, quantitative, on exponentially growing cultures of *Escherichia coli*, distribution of parental deoxyribonucleic acid, ribonucleic acid, protein, and cell wall among progeny cells, 589
Reaction, Hill, in algal cells, second Emerson effect in, 377
Receptor potential response, graded, to light in *Limulus* eye, reversal of photoreceptor polarity recorded during, 551
Resistance, time variant, anomalous impedance, phenomenological property, 353
Ribonucleic acid, deoxy-, and acridine orange, complex, damage by visible light, 389
———— acid, deoxy-, *Escherichia coli*, changes in number of strands during replication cycle, 337
———— acid, deoxy-, molecular weight and aggregation, 301
———— acid, deoxy-, number of polynucleotide strands in conserved unit, 323
———— acid, deoxy-, replication, two molecular classes, 317
———— acid, deoxy-, ribonucleic acid, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589
———— acid, deoxyribonucleic acid, protein, and cell wall, distribution among progeny cells of exponentially growing cultures of *Escherichia coli*, quantitative radioautographic studies, 589

Ribonucleic acid, high molecular weight, in solution, small-angle x-ray scattering study of structure, 525
———— acid, ribosomal, *Escherichia coli*, degradation products, 215
———— acid, ribosomal, *Escherichia coli*, kinetics of synthesis, 227
Ribosomal ribonucleic acid, *Escherichia coli*, degradation products, 215
———— ribonucleic acid, *Escherichia coli*, kinetics of synthesis, 227
Ribosomes, native and derived 30S and 50S, of *Escherichia coli*, comparison, 517
Rotatory dispersion, ultraviolet optical, of tobacco mosaic virus and components, 55

S

Scattering, small-angle x-ray, structure of high molecular weight ribonucleic acid in solution, 525
————, x-ray, wild cucumber mosaic virus and related protein, 657
Sequences, macromolecular, origin, 683
Serum albumin, bovine, gramicidin, and dimethylformamide, spectroscopic evidence for complexing of acetic acid with, 711
Solutions, computer, for photosynthesis rates from two pigment model, 669
Spectroscopic evidence for complexing of acetic acid with bovine serum albumin, gramicidin, and dimethylformamide, 711
Spectrum, action, of second Emerson effect, 73
Squid axon, clamped, membrane potential along, 401
———— axon voltage clamp measurements, analysis of certain errors in, 161
———— giant axon, potassium ion current in, dynamic characteristic, 1

T

Temperatures, subzero, physical and temporal factors involved in death of yeast at, 247
Time-variant resistance, anomalous impedance, phenomenological property, analytic review, 353
Tissue culture, microexudates from cells grown in, 137
Tobacco mosaic virus and components, structure, ultraviolet optical rotatory dispersion, 55
Transport mechanisms, active, energy expenditure by, 419

U

Ultraviolet light inactivation of ΦX174 bacteriophage at different wave lengths and hydrogen ion concentrations, 29
———— optical rotatory dispersion of tobacco mosaic virus and components, 55

V

Vaccinia virus infectivity, inactivation with low-energy electrons, 43
Vessel wall, effects on electromagnetic flow measurement, 627
Virus, tobacco mosaic, and components, structure, ultraviolet optical rotatory dispersion, 55
————, vaccinia, inactivation of infectivity with low-energy electrons, 43
————, wild cucumber mosaic, and related protein, x-ray scattering, 657
Viruses, pox, physical studies, inactivation of vaccinia virus infectivity with low-energy electrons, 43
Voltage clamp measurements, squid axon, analysis of certain errors in, 161
————, low, electron bombardment, localization of β-galactosidase in *Escherichia coli* cells by, 429

W

Weight, molecular, and aggregation of deoxyribonucleic acid, 301
————, molecular, high, ribonucleic acid in solution, small-angle x-ray scattering, 525

X

X-ray diffraction, feather keratin structure, 467
———— scattering, investigation of wild cucumber mosaic virus and related protein, 657
———— scattering, small-angle, structure of high molecular weight ribonucleic acid in solution, 525

Y

Yeast, death at subzero temperatures, physical and temporal factors involved, 247